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APPALACHIAN MOUNTAIN ADVOCATES

Great Horned Owl © Estate of Roger Tory Peterson.

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January 16, 2015

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OFFICE OF THE EXECUTIVE SECRETARIAT

Mr. Andrew Jordan
President
Pritchard Mining Company, Inc.
13905 MacCorkle Ave.
Suite 200
Chesapeake, WV 25315

By Certified Mail – Return Receipt Requested

Re: 60-Day Notice of Intent to File Citizen Suit Under Clean Water Act Section 505(a)(1) for Violation of Terms and Conditions of West Virginia NPDES Permit WV1015184, and 60-Day Notice of Intent to File Citizen Suit Under the Federal Surface Mining Control and Reclamation Act Section 520(a)(1) for Violations of Federal and State Regulations and Permit Conditions of West Virginia Surface Mining Permit S300796

Dear Mr. Jordan:

The Sierra Club, Ohio Valley Environmental Coalition, and the West Virginia Highlands Conservancy, and West Virginia Rivers Coalition (collectively, "the Sierra Club"), in accordance with section 505 of the Clean Water Act (the "Act" or the "CWA"), 33 U.S.C. § 1365, and 40 C.F.R. Part 135, hereby notify you that Pritchard Mining Company, Inc. ("Pritchard") has violated, and continues to violate, "an effluent standard or limitation" under Section 505(a)(1)(A) of the Act, 33 U.S.C. § 1365(a)(1)(A), by failing to comply with the terms and conditions of West Virginia/National Pollution Discharge Elimination System ("WV/NPDES") Permit WV1015184. If within sixty days of the postmark of this letter Pritchard does not bring itself into full compliance with the Act, we intend to file a citizens' suit seeking civil penalties for Pritchard's ongoing and continuing violations and for an injunction compelling it to come into compliance with the Act.

We further notify you, in accordance with section 520 of the federal Surface Mining Control and Reclamation Act ("SMCRA"), 30 U.S.C. § 1270, and 30 C.F.R. § 700.13, that Pritchard is in ongoing and continuing violation of certain federal and state regulations promulgated under SMCRA and the West Virginia Surface Coal Mining and Reclamation Act ("WVSCRMA" or the "State Act") and certain permit conditions of its West Virginia Surface Mining Permit S300796 as a result of its discharges of pollutants into Little Rich Fork of Rich Fork of Bull Creek of the Big Coal River of the Coal River. If, within sixty

days, Pritchard does not bring itself into full compliance with SMCRA, the regulations promulgated under SMCRA and the WVSCMRA, and the Surface Mining Permit identified below, we intend to file a citizens' suit in federal court seeking an injunction compelling Pritchard to come into compliance with the applicable statutes, regulations, and permits.

I. FACTUAL BACKGROUND

On or about March 6, 1997, WVDEP issued West Virginia Surface Mining Permit No. S300796 to Battle Ridge Companies for the Fourmile Surface Mine in Kanawha and Boone Counties, West Virginia. On or about August 19, 1999, WVDEP transferred that permit to CC Coal Company. WVDEP renewed Surface Mining Permit No. S300796 in 2002. On or about September 6, 2005, WVDEP approved a transfer of the mining permit from CC Coal Company to Pritchard. WVDEP renewed the permit in 2007 and again 2012, and the permit remains in effect today.

Among the surface mining activities authorized by Surface Mining Permit No. S300796 is the construction of Valley Fill No. 3 in the headwaters of Little Rich Fork of Rich Fork of Bull Creek. Effluent from Valley Fill No. 3 is discharged into Little Rich Fork through Outlet 003, regulated by WV/NPDES Permit WV1015184.

WVDEP issued WV/NPDES Permit No. WV1015184 on February 2, 1997, to Battle Ridge Companies to authorize discharges from the Fourmile Surface Mine. On or about February 25, 2000, WVDEP transferred WV/NPDES Permit WV1015184 to CC Coal Company. The permit was reissued in 2004, and WVDEP transferred the permit to Pritchard Mining Company on or about September 23, 2005. WVDEP reissued WV/NPDES Permit WV1015184 in 2006 and 2014, and the permit remains in effect. The permit regulates discharges from the Fourmile Fork Surface Mine, including Outlet 003. It also requires instream monitoring of concentrations of several pollutants in Little Rich Fork. Part C of WV/NPDES Permit WV1015184 incorporates by reference 47 CSR § 30-5.1.f, which provides that: "The discharge or discharges covered by a WV/NPDES permit are to be of such quality so as not to cause violation of applicable water quality standards adopted by the Department of Environmental Protection, Title 47, Series 2." WVDEP's narrative water quality standards prohibit discharges of "[m]aterials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life" or that cause "significant adverse impacts to the chemical, physical, hydrologic, or biological components of aquatic ecosystems." 47 C.S.R. §§ 2-3.2.e & 2-3.2.i.

The original applicant for Surface Mining Permit S300796 provided baseline water quality data to WVDEP in Section J of the application. Among those data were the following measurements of the total dissolved solids ("TDS"), conductivity, and sulfates in Little Rich Fork prior the commencement of mining operations at the Fourmile Fork Surface Mine:

Sampling Date	TDS (mg/L)	Conductivity (µS/cm)	Sulfates (mg/L)
March 27, 1995	55	81	28.11
April 5, 1995	100	146	23.28
May 22, 1995	61	95	21.75
June 7, 1995	91	140	20.06
July 13, 1995	129	187	20.12

As part of its 2006 application for the reissuance of WV/NPDES Permit WV1015184 for the Fourmile Surface Mine, Pritchard submitted additional water quality data to WVDEP for Little Rich Fork. Among those data were the following measurements of TDS, conductivity, and sulfates, collected prior to the construction of Valley Fill No. 3:

Sampling Date	TDS (mg/L)	Conductivity (µS/cm)	Sulfates (mg/L)
April 11, 2005	62	78	21
May 12, 2005	52	76	22
June 15, 2005	71	91	23
July 12, 2005	80	109	19
August 5, 2005	82	105	20

In Spring 2005 and Fall 2005 (again, before construction of Valley Fill No. 3 began), Pritchard commissioned benthic surveys of the aquatic life in Little Rich Fork. Those surveys occurred at two locations in Little Rich Fork: LRF1 and LRF2. Among the data collected during the benthic surveys were the following measurements of conductivity, TDS, sulfates, calcium and magnesium:

Sampling Location	Sampling Date	TDS (mg/L)	Conductivity (µS/cm)	Sulfates (mg/L)	Calcium (mg/L)	Magnesium (mg/L)
LRF1	April 5, 2005	6	50	16.7	3.22	3.07
LRF2	April 5, 2005	27	40	15.5	2.83	3.05
LRF1	November 3, 2005	66	80	18.8	16.7	7.67
LRF2	November 3, 2005	67	50	18	5.89	4.98

Pritchard's consultant determined that Little Rich Fork's West Virginia Stream Index ("WVSCI") Score in Spring 2005 was 90.6 at LRF1 and 78.2 at LRF2. The calculated WVSCI score in Little Rich Creek for Fall 2005 was 76.1 at LRF1 and 70.5 at LRF2. WVDEP considers streams with WVSCI scores above 68 to be biologically unimpaired.

After construction of Valley Fill No. 3 began, Pritchard measured increasing levels of conductivity in Little Rich Fork at Outlet 003. For example, in 2010, Pritchard reported the following measurements of conductivity at DSLRF to WVDEP, in correspondence related to a violation of the aluminum limits in WV/NPDES Permit WV1015184:

Sampling Date	Conductivity (µS/cm)
December 3, 2009	935
December 21, 2009	305

Also in 2010, Pritchard measured the following conductivity levels at the instream monitoring location in Little Rich Fork, and reported them to WVDEP as part of its application for Amendment No. 2 to Surface Mining Permit S300796:

Sampling Date	Conductivity (µS/cm)
January 13, 2010	382
February 2, 2010	340
April 7, 2010	408
May 7, 2010	490
June 14, 2010	629

For its application for the reissuance of WV/NPDES Permit WV1015184, which resulted in the November 2014 reissuance of that permit, Pritchard sampled the effluent from Outlet 003 for a variety of parameters on November 29, 2012, and reported the results to WVDEP. Among those data were the following measurements of the specific conductance of the effluent and the concentrations of sulfates, TDS, calcium, and magnesium in the effluent:

Conductivity (µS/cm)	Sulfates (mg/L)	TDS (mg/L)	Calcium	Magnesium
1210	502	1000	122	88.2

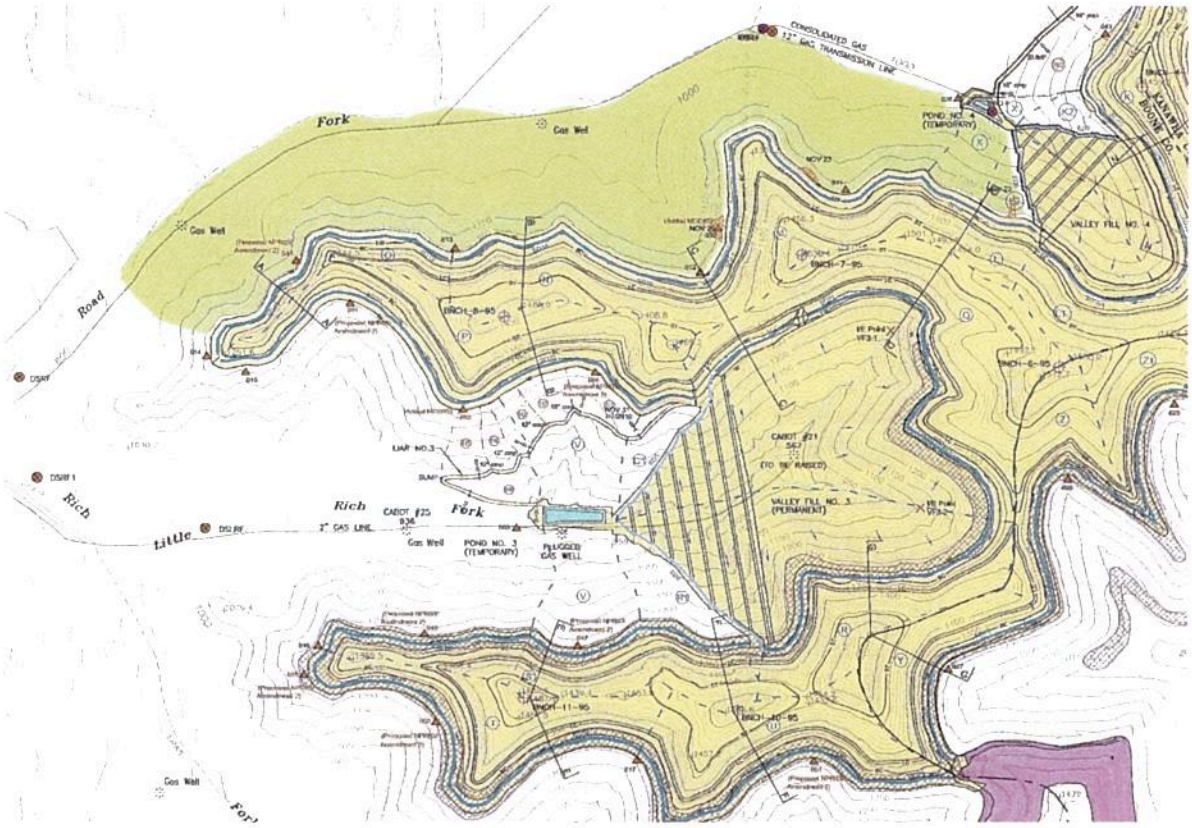
All of those parameters measured significantly higher on November 29, 2012—after the construction of Valley Fill No. 3—than they did in 2005 at the time of the benthic sampling described above.

In July 2012, Pritchard began reporting the concentrations of TDS and sulfates and the specific conductance that it measures in Little Rich Fork at DSLRF in its discharge monitoring reports ("DMRs") to WVDEP. The following table sets out the measurements that Pritchard has reported since that time:

Reporting Month	Conductivity (µS/cm)		Sulfates (mg/L)		TDS (mg/L)	
	Average	Maximum	Average	Maximum	Average	Maximum
July 2012	1510	1610	572.5	688	1117	1286
August 2012	1890	4980	638	712	1275	1420
September 2012	1950	2050	579	652	1172.5	1351
October 2012	1955	2020	613	622	1114	1148
November 2012	1595	1770	514	544	944	988
December 2012	964	1390	310	427	607	813
January 2013	743.5	751	260.5	272	553	583
February 2013	1305	1380	428.5	459	850.5	905
March 2013	886	933	318	324	465.5	628
April 2013	875	941	351.5	393	682	764
May 2013	1535	1560	464	466	991.5	1017
June 2013	1495	1750	514.5	624	1106	1371
July 2013	1485	1600	500	528	1013.5	1067
August 2013	1625	1670	616	654	1206.5	1303
September 2013	1680	1740	628.5	730	1262	1475
October 2013	1995	2010	672	746	1271.5	1326
November 2013	1700	1780	581	608	1095	1121

December 2013	1295	1370	456.5	460	852.5	854
January 2014	1552.5	2340	466	647	862.5	1191
February 2014	905.5	914	354.5	357	672	690
March 2014	1334	1750	476	574	880	1084
April 2014	1507	2110	540	712	1055.5	1399
May 2014	2330	2490	793	856	1458.5	1546
June 2014	1860	2110	657	768	1238	1418
July 2014	2570	2700	958	1044	1676.5	1789
August 2014	2295	2340	950	990	1659	1715
September 2014	1865	2440	664	929	1225	1666

The relevant outfalls and instream monitoring points are shown on the map below:



In 2011, EPA scientists summarized the existing science connecting conductivity and biological degradation in an EPA report entitled, "A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams." That report, which was peer-reviewed by top scientists on EPA's Science Advisory Board, used EPA's standard method for deriving water quality criteria to derive a conductivity benchmark of 300 µS/cm. Id. at xiv-xv. According to the species sensitivity distribution in the benchmark, on average, five percent of species are lost when conductivity rises to 295 µS/cm, over 50% are lost at 2000 µS/cm, and close to 60% are lost at 3000 µS/cm. Id. at 18. EPA considered potential confounding factors, including habitat, temperature, deposited sediments and pH, and concluded that none of them altered the relationship between conductivity and biological decline or the benchmark value of 300 µS/cm.

Id. at 41, B-22. EPA found that the loss of aquatic species from increased conductivity was "a severe and clear effect." Id. at A-37. EPA also conducted a detailed causal assessment and concluded that there is a causal relationship between conductivity and stream impairment in West Virginia. Id. at A-39. Finally, EPA's benchmark report analyzed the relationship between the WVSCI biological impairment threshold and conductivity levels, and found that a WVSCI score of 64 (close to the impairment threshold of 68) corresponds to streams with conductivity of about 300 µS/cm on average. Id. at A-36. A statistical analysis included in the benchmark determined that at a conductivity level of 300 µS/cm a stream is 59% likely to be impaired and at 500 µS/cm a stream is 72% likely to be impaired. Id.

Based on the elevated conductivity and concentrations of TDS and sulfates detected by Pritchard since 2009, the Sierra Club believes that the ions present in Little Rich Fork downstream of Outlet 003 are consistent with those associated with coal mining pollution in this region (Pond et al. 2008; Palmer et al. 2010; Bernhardt and Palmer 2011; Lindberg et al. 2012; Pond et al. 2010; Pond et al. 2012; Pond et al. 2014; Kunz 2013). The ionic mixture of calcium, magnesium, sulfate, and biocarbonate in alkaline mine water causes the loss of aquatic macroinvertebrates in Appalachian areas where surface coal mining is prevalent; it is the mixture of ions that causes the biological impairment (Cormier et al. 2013b; Cormier and Suter 2013). This mixture also has significant adverse effects on fish assemblages (Hitt 2014; Hopkins 2013) and has toxic effects on aquatic life, including mayflies (Kunz 2013; Echols 2010; Kennedy 2004).

Bernhardt et al. (2012) concluded that:

> The extent of surface mining within catchments is highly correlated with the ionic strength and sulfate concentrations of receiving streams. Generalized additive models were used to estimate the amount of watershed mining, stream ionic strength, or sulfate concentrations beyond which biological impairment (based on state biocriteria) is likely. We find this threshold is reached once surface coal mines occupy >5.4% of their contributing watershed area, ionic strength exceeds 308 µS cm^{-1}, or sulfate concentrations exceed 50 mg L^{-1}.

Pritchard's Fourmile Fork Surface Mine is a major development activity covering 668.16 acres. The high mining intensity in the affected watersheds and the related discharges from Outlets 003 and Valley Fill No. 3 have likely caused or materially contributed to biological impairment in Little Rich Fork. There are no other evident sources of ionic pollution into Little Rich Fork apart from Valley Fill No. 3, and the pollutant concentrations and conductivity of the effluent from Outlet 003 on November 29, 2012, demonstrate that the drainage from Valley Fill No. 3 is the source of the elevated pollutant concentrations and conductivity. Because Valley Fill No. 3 was constructed in the headwaters of Little Rich Fork, flow from Outlet 003 contributes most of the flow to the stream.

Moreover, Outlet 003 discharges on a regular basis. Since December 2009, Pritchard has never reported a "No Flow" in its DMRs to WVDEP. The following table summarizes the flow that Pritchard has reported from Outlet 003 from December 2009 through September 2014:

Reporting Period	Minimum Flow (gpm)	Maximum Flow (gpm)

December 2009	0.015	0.032
January 2010	Not Reported	0.06
February 2010	Not Reported	0.06
March 2010	Not Reported	0.07
April 2010	Not Reported	42.00
May 2010	Not Reported	36.00
June 2010	Not Reported	58.00
July 2010	Not Reported	59.00
August 2010	Not Reported	17.95
September 2010	Not Reported	9.00
October 2010	Not Reported	Not Reported
November 2010	Not Reported	21.00
December 2010	Not Reported	21.00
January 2011	Not Reported	20.00
February 2011	Not Reported	16.00
March 2011	Not Reported	16.00
April 2011	Not Reported	31.00
May 2011	Not Reported	21.00
June 2011	Not Reported	16.00
July 2011	Not Reported	22.00
August 2011	Not Reported	16.00
September 2011	Not Reported	33.00
October 2011	Not Reported	19.00
November 2011	Not Reported	14.00
December 2011	Not Reported	22.00
January 2012	Not Reported	39.00
February 2012	Not Reported	30.00
March 2012	Not Reported	24.00
April 2012	Not Reported	18.00
May 2012	Not Reported	26.00
June 2012	Not Reported	12.00
July 2012	Not Reported	5.00
August 2012	Not Reported	11.00
September 2012	Not Reported	8.00
October 2012	Not Reported	16.00
November 2012	Not Reported	16.00
December 2012	Not Reported	0.077
January 2013	Not Reported	24.00
February 2013	Not Reported	16.00
March 2013	Not Reported	24.00
April 2013	Not Reported	21.00
May 2013	Not Reported	11.00
June 2013	Not Reported	11.00
July 2013	Not Reported	10.00
August 2013	Not Reported	10.00

September 2013	Not Reported	10.00
October 2013	Not Reported	8.00
November 2013	Not Reported	10.00
December 2013	Not Reported	27.00
January 2014	19.00	29.00
February 2014	16.00	19.00
March 2014	16.00	20.00
April 2014	0.044	0.049
May 2014	16.00	18.00
June 2014	10.00	14.00
July 2014	6.00	6.00
August 2014	6.00	6.00
September 2014	6.00	10.00

In sum, the available evidence shows that, since at least 2009 and as a result of Pritchard's mining operations at its Fourmile Fork Surface Mine, Little Rich Fork has had elevated chemical ions, including sulfate, calcium, magnesium, and bicarbonate, measured as increased conductivity, TDS, and sulfates, and has likely biologically impaired aquatic life. Dr. Ryan King of Baylor University conducted a statistical analysis of the relationship between conductivity and WVSCI scores, and concluded that 97% of streams with conductivity greater than 1500 µS/cm—as has been measured in Little Rich Fork—have failing WVSCI scores. (King 2014). Accordingly, Dr. King concluded that "conductivity associated with surface mining consistently and unequivocally is associated with biological impairment, and is close to 100% accurate when conductivity exceeds 1500 µS/cm." Id. As a result, it is a near statistical certainty that Little Rich Fork is biologically impaired.

In addition, because of solar heating of the sediment control ponds upstream of Outlet 003, the mine has discharged a pollutant (i.e., heat) that has caused or materially contributed to increased temperature in downstream waters which may be a contributing factor to the observed biological impairment. The mine has also discharged other pollutants from that Outlet (e.g., manganese and dissolved solids) that degrade the habitat of downstream waters by causing or materially contributing to increased embeddedness of the stream substrate, which may be another contributing factor to biological impairment. These discharges and violations began when Valley Fill No. 3 was constructed and are continuing.

II. LEGAL CLAIMS

A. CLEAN WATER ACT VIOLATIONS

Section 301 of the CWA prohibits the discharge of any pollutant by any person, except in compliance with a permit. WV/NPDES Permit WV1015184 allows Pritchard to discharge specified pollutants into West Virginia's waters. Noncompliance with an NPDES Permit constitutes a violation of the CWA. Sierra Club v. Powellton Coal Co., LLC, 662 F. Supp. 2d 514, 516 (S.D. W. Va. 2009). Citizens may sue any person who violates a term or condition of an NPDES Permit. Id. at 517. Pritchard's WV/NPDES Permit WV1015184 prohibits discharges that cause or materially contribute to violations of applicable water quality standards. 47 C.S.R.

§ 30-5.1.f. WVDEP defines its applicable water quality standards to include narrative standards. 47 C.S.R. § 2-3.2. In addition, federal regulations require states to issue NPDES permits that require compliance with "State narrative criteria for water quality." 40 C.F.R. §§ 122.44(d)(1), 123.25(a)(15).

The permit condition prohibiting discharges that cause or contribute to water quality standards violations is enforceable in a citizen suit. Ohio Valley Envtl. Coalition, Inc. v. Alex Energy, Inc., ___ F. Supp. 2d ___, 2014 WL 3687741 at *3 (S.D. W. Va. 2014); Ohio Valley Envtl. Coalition, Inc. v. Elk Run Coal Co., ___ F. Supp. 2d ___, 2014 WL 2526569 at *1 (S.D. W. Va. 2014); Ohio Valley Envtl. Coalition, Inc. v. CONSOL of Kentucky, Inc., Civ. No. 2:13-cv-5005, 2014 WL 1761938 at *3 (S.D. W. Va. Apr. 30, 2014); Ohio Valley Envtl. Coalition, Inc. v. Fola Coal Co., LLC, Civ. No. 2:12-cv-3750, 2013 WL 6709957 at *21 (S.D. W. Va. Dec. 19, 2013); Ohio Valley Envtl. Coalition, Inc. v. Marfork Coal Co., Inc., 966 F. Supp. 2d 667, 685 (S.D. W. Va. 2013). Moreover, citizens may enforce narrative state water quality standards through this type of permit condition. Elk Run, 2014 WL 2526569 at *1–*2. See also Northwest Envtl. Advocates v. City of Portland, 56 F.3d 979, 986-988 (9th Cir. 1995); New Manchester Resort & Golf, LLC v. Douglasville Development, LLC, 734 F. Supp.2d 1326, 1336-39 (N.D. Ga. 2010) (allowing citizen enforcement of narrative water quality standard prohibiting water discoloration); Swartz v. Beach, 229 F. Supp.2d 1239, 1270-72 (D. Wyo. 2002) (allowing citizen enforcement of narrative water quality standard prohibiting water degradation that causes a measurable decrease in crop or livestock production). "[S]tate standards, including narrative as opposed to numerical criteria, incorporated into an NPDES permit may be enforced through a citizens' suit." Gill v. LDI, 19 F. Supp. 2d 1188, 1195 (W.D. Wash. 1998).

West Virginia's narrative water quality standard provides that:

> No . . . wastes present in any waters of the state shall cause therein or materially contribute to any of the following conditions thereof: . . .
>
> 3.2.e. Materials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life; . . . and
>
> 3.2.i. Any other condition . . . which adversely alters the integrity of the waters of the State including wetlands; no significant adverse impacts to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed.

47 C.S.R. §§ 2-3.2.e & 2-3.2.i. Thus, the standard is violated if wastes discharged from a mining operation "cause" or "materially contribute" materials "that are harmful . . . or toxic to . . . aquatic life" or that have "significant adverse impacts to . . . biological components of aquatic ecosystems." "Biological monitoring is one method of testing [for] compliance with narrative criteria." American Paper Institute, 996 F.2d 346, 350 (D.C. Cir. 1993).

Based on the baseline conditions described above, and the observed levels of TDS, conductivity, sulfates, calcium, and magnesium in Little Rich Fork after the construction of Valley Fill No. 3, Sierra Club believes that Pritchard's discharges into Little Rich Fork from Outlet 003 have violated the "harmful . . . to . . . aquatic life" and "significant adverse impact"

components of West Virginia's narrative standards. 47 C.S.R. §§ 2-3.2.e & 2-3.2.i. Prior to mining, Pritchard's consultant determined that the WVSCI score for Little Rich Fork was well above 68, the threshold below which a stream is biologically impaired. Based on the demonstrated causative relationship between elevated ionic concentrations and biological impairment, Sierra Club believes that Little Rich Fork is now biologically impaired based on the measured concentrations of sulfates and TDS and the elevated conductivity.

Because Pritchard's Fourmile Fork Surface Mine is a major development activity in the Little Rich Fork watershed, and because Little Rich Fork is contaminated with discharge from Outlet 003 that contains high levels of ionic pollutants, Pritchard has caused, or materially contributed to, violations of the narrative state water quality standards, its WV/NPDES permit and the CWA. See Elk Run, supra; Upper Chattahoochee Riverkeeper v. City of Atlanta, 986 F. Supp. 1406, 1427 (N.D. Ga. 1997) (city found liable for violating water quality standard for fecal coliform bacteria because its "discharges correlate generally (although not perfectly) with measurements of fecal coliform bacteria in the receiving streams that are thousands of times higher than they should be" and there was no "other source that is contributing such massive amounts of fecal coliform bacteria to explain the level of fecal coliform bacteria in the receiving streams below" its treatment facilities). Based on the available evidence, and the absence of any corrective measures by Pritchard since the samples were taken, we believe Pritchard's violations are ongoing. Pritchard's violations occurred on every day when there was a measured flow from Outlet 003 because that Outlet contributes most of the flow to Little Rich Fork. If Pritchard does not cease those violations within 60 days, we intend to bring a citizen suit against Pritchard under Section 505 of the Clean Water Act.

B. SURFACE MINING VIOLATIONS

Section 520(a)(1) of SMCRA authorizes citizens to commence civil actions against any person alleged to be in violation of rules, orders, or permits issued pursuant to SMCRA. 30 U.S.C. § 1270(a)(1). West Virginia has a federally-approved mining program under SMCRA which is administered by the WVDEP pursuant to the West Virginia Surface Coal Mining Reclamation Act ("WVSCMRA"), W. Va. Code § 22-3-1 through 32a. Powellton, 662 F. Supp. at 518. Violations of a federally-approved state program are enforceable in federal court under SMCRA's citizen suit provision. Molinary v. Powell Mountain Coal Co., Inc., 125 F.3d 231, 237 (4th Cir. 1997). We believe that Pritchard is in continuous and ongoing violation of the following:

(1) 38 C.S.R. § 2-14.5, promulgated under WVSCMRA;
(2) 30 C.F.R. §§ 816.41(a) and 817.41(a), promulgated under SMCRA;
(3) 30 C.F.R. §§ 816.42 and 817.42, promulgated under SMCRA;
(4) The permit conditions incorporated into West Virginia Surface Mining Permit S005185 by operation of 38 C.S.R. § 2-3.33.c, promulgated under WVSCMRA.

Pritchard's SMCRA-related violations began at least in December 2009, when the observed specific conductance in Little Rich Fork exceeded 300 µS/cm.

Section 506 of SMCRA prohibits surface coal mining operations without a permit from the Office of Surface Mining Reclamation and Enforcement ("OSMRE") or from an approved

state regulatory authority. 30 U.S.C. § 1256. Pritchard holds mining permit S300796 from WVDEP for its Fourmile Fork Surface Mine. The WVSCMRA provides that "[a]ny permit issued by the director pursuant to this article to conduct surface mining operations shall require that the surface mining operations meet all applicable performance standards of this article and other requirements set forth in legislative rules proposed by the director." W. Va. Code § 22-3-13(a). In turn, WVDEP's regulations under that statute provide that "[t]he permittee shall comply with the terms and conditions of the permit, all applicable performance standards of the Act, and this rule." 38 C.S.R. § 2-3.33.c; Powellton, 662 F. Supp.2d at 518.

The federal performance standards under SMCRA mandate that all discharges from permitted mining operations "be made in compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 C.F.R. Part 434. 30 C.F.R. §§ 816.42 & 817.42. The State program prescribes a similar standard: "Discharge from areas disturbed by surface mining shall not violate effluent limitations or cause a violation of applicable water quality standards." 38 C.S.R. § 2-14.5.b (emphasis added).

As described above, Pritchard's discharges from the Fourmile Fork Surface Mine from Outlet 003 into Leatherwood Creek have caused violations of the narrative water quality standards for protection of aquatic life. Consequently, Pritchard is in violation of the state and federal performance standards that prohibit mining operations from causing violations of water quality standards.

In addition, Pritchard's mining operations have resulted in impermissible material damage to the hydrologic balance. The performance standards under WVSMCRA mandate that "[a]ll surface mining and reclamation activities shall be conducted . . . to prevent material damage to the hydrologic balance outside the permit area." 38 C.S.R. § 2-14.5. At a minimum, "material damage" includes violations of water quality standards. Ohio River Valley Environmental Coalition, Inc. v. Castle, Civ. No. 3:00-cv-0058, Memo. Opinion & Order at 12-13 (S.D. W. Va. June 14, 2000). Accordingly, the water quality standards violations described above constitute material damage to the hydrologic balance and are actionable in a SMCRA citizen suit against Pritchard.

Moreover, Pritchard has a legal duty to treat its effluent to ensure that it does not violate water quality standards. Federal and State performance standards require that, "[i]f drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet the requirements of this section and § 816.42, the operator shall use and maintain the necessary water-treatment facilities or water quality controls." 30 C.F.R. § 816.41(d)(1); see also 38 C.S.R. § 2-14.5.c ("Adequate facilities shall be installed, operated and maintained using the best technology currently available in accordance with the approved preplan to treat any water discharged from the permit area so that it complies with the requirements of subdivision 14.5.b of this subsection.") The violations identified herein show unequivocally that Pritchard's existing treatment methods are insufficient to meet that requirement. Thus, the performance standards require Pritchard to construct systems that will effectively treat its effluent to levels that comply with all applicable water quality standards.

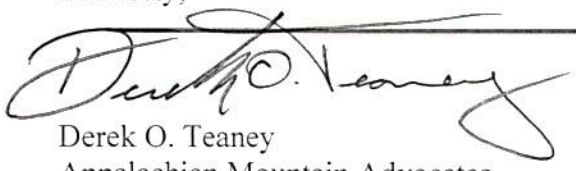
Finally, Pritchard's violations of the performance standards that prohibit violations of water quality standards and material damage and that require adequate treatment to avoid such violations are violations of its mining permit S300796. By operation of 38 C.S.R. § 2-33.c, that permit incorporates the performance standards discussed in this letter as terms of the permit itself. Consequently, Pritchard is violating its SMCRA permit.

III. CONCLUSION

As discussed above, if Pritchard fails to come into compliance with the Clean Water Act; the terms of WV/NPDES Permit WV1015184; SMCRA; surface mining regulations; and the permit conditions of Surface Mining Permit S300796, we intend to file a citizen suit under section 505(a)(1) of the Clean Water Act seeking civil penalties and injunctive relief, as well as a citizen suit under section 520(a)(1) of SMCRA seeking a court order compelling Pritchard to come into compliance with the law. Be aware that this notice is sufficient to allow us to sue Pritchard for any post-notice violations related to the violations described herein. See generally, Public Interest Research Group of N.J., Inc. v. Hercules, Inc., 50 F.3d 1239 (3rd Cir. 1995).

If Pritchard has taken any steps to eradicate the underlying cause of the violations described above, or if Pritchard believes that anything in this letter is inaccurate, please let us know. If Pritchard does not advise us of any remedial steps during the 60-day period, we will assume that no such steps have been taken and that violations are likely to continue. Additionally, we would be happy to meet with Pritchard or its representatives to attempt to resolve these issues within the 60-day notice period.

Sincerely,



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Expert comment on the principal cause of biological impairment in Stillhouse Branch below Fola Surface Mine No. 3, Clay County, West Virginia

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Qualifications to provide expert comment

I am an Associate Professor of Biology with 15 years of experience in the field of aquatic ecology. I received my PhD in Ecology from Duke University in 2001 and worked at the Smithsonian Institution from 2001-2004. I have expertise in detecting and interpreting ecological thresholds and diagnosing causes of biological impairment in aquatic ecosystems using field observations. I have applied these approaches to develop nutrient criteria for the Florida Everglades and Texas streams, identify land-use thresholds in the Chesapeake Bay watershed in the mid-Atlantic, and examine the effects of conductivity and sulfate on stream macroinvertebrates in West Virginia. I have served as a manuscript reviewer for over 20 peer-reviewed journals and am currently a Subject-Matter Editor for *Ecological Applications*, one of the highest impact journals in the fields of ecology and environmental science. I previously served as Associate Editor for the leading journal of stream ecology, *Journal of the North American Benthological Society* (recently renamed *Freshwater Science*).

Opinions and Analysis

I have reviewed historical and current data specific to the condition of Stillhouse Branch. It is my opinion that significantly elevated electrical conductivity directly linked to outfalls from surface mining operations is the principal cause of biological impairment in Stillhouse Branch. Here, I explain my opinion based on numerous sources of evidence.

First, historical data indicates that Stillhouse Branch had conductivity and sulfate levels that were consistent with natural, undisturbed streams in the Appalachian Mountain region of West Virginia. Conductivity from 1994-95 prior to the Fola mine ranged from 77-104 uS/cm, whereas sulfate was 4-22 mg/L. These numbers are within the median for regional reference sites identified by WVDEP (see Bernhardt et al. 2012). Thus, prior to mining, the chemistry of the stream with respect to conductivity and sulfate was natural.

More recent data collected since 2003 following the mining and completion of the valley fill reveals values for conductivity consistently exceeding 3000 uS/cm and sulfate values between 1500 and 3000 mg/L. These numbers are high relative to other streams below mines in West Virginia and certainly far above the background, natural conditions the stream once supported.

EXHIBIT A

Several studies have shown that streams below surface mines and valley fills with elevated conductivity (e.g., >300 uS/cm) are biologically impaired and that ions contributing to conductivity are very probable drivers of these impairments. Pond et al. (2008) showed that macroinvertebrates associated with low-conductivity, low-sulfate reference streams decline precipitously with increasing conductivity associated with alkaline mine drainage (i.e., sites with elevated sulfate, low chloride, and basic pH). In a different study, Petty et al. (2010) demonstrated that streams in catchments with as little as 1-5% mining intensity were biologically degraded, and these streams always had elevated conductivity and sulfate. Also in West Virginia, Merriam et al (2010) found that streams with moderate amounts of human development or mining were both biologically degraded, but that mining degraded developed streams even more, illustrating a distinct effect of mining on streams relative to other stressors.

US EPA (2011) used a large population of sites across West Virginia to estimate potential threshold responses of macroinvertebrate genera to conductivity associated with mining. It demonstrated that, of the genera that were sufficiently common to analyze statistically, 5% of them were extirpated from streams with conductivity > 297 uS/cm. The methods used were consistent with standard EPA methodology for deriving benchmarks for water quality. (Cormier et al., 2013a, Cormier and Suter, 2013b). EPA researchers verified that alkaline mine drainage was a cause of biological degradation in Appalachian streams. (Cormier et al., 2012). The observed relationship persisted even when confounding factors including habitat quality, deposited sediment, pH, selenium, catchment area, settling ponds and metals were examined (Cormier and Suter, 2013c).

Biological assessment data measured by WVDEP indicated a WVSCI score of 47 in 2003, which is well below the impairment threshold of 68 (Tetra Tech 2000). In 2012, WVDEP found the WVSCI score to be 31.6, again failing to meet criteria for biological condition.

Recent assessments conducted by Dr. Chris Swan on 9/30/13 again resulted in a failing WVSCI score, of 58.17, and a failing GLIMPSS score of 27.71[1] as well as conductivity near 3000 uS/cm. Importantly, Dr. Swan also completed a rapid biological protocol (RBP) habitat assessment, which resulted in a score of 130 (scaled from 0-200). This score is considered "sub-optimal" (Tetra Tech 2000) but well above the threshold for "marginal" (<120 according to Tetra Tech, but <110 in the WVDEP database). Also note that USEPA (2011) used an RBP of 115 as their threshold for "low" scoring habitat.

Closer examination of the RBP habitat assessment revealed no evidence of instream habitat degradation sufficient to cause the consistent biological impairment documented in Stillhouse Branch. Only the bank erosion scores, which were indicative of moderately high erosion, were sufficient to raise concern about habitat being a contributing factor in the failing WVSCI score. However, if erosion was currently a problem, fine sediment on and between cobble and gravel should have been evident. Rather, fine silt and clay were not documented in the reach (see "Inorganic substrate components", page A-6, Stillhouse

[1] While West Virginia has not adopted a GLIMPSS standard, the GLIMPSS score calculated by Dr. Swan is below any justifiable threshold under the method for the state. (Pond 2013)

RBP form 9/30/13). Moreover, epifaunal substrate, substrate embeddeness, and sediment deposition were scored 13, 14, and 13 on 0-20 point scale, where 20=optimal). These scores are consistent with minimal habitat degradation and none sufficient to indicate heavy sedimentation from bank erosion as a cause of biological impairment. Finally, temperature and dissolved oxygen recorded on the RBP assessment were normal. The only obvious factor that could result in a consistently failing WVSCI score was conductivity, measured to be 2825 uS/cm that day.

I examined the taxonomic data associated with the failing WVSCI score recorded on 9/30/13. The taxa documented at Stillhouse Branch are typical of streams impaired by conductivity associated with surface mining and valley fills. Four of the 6 families and 6 of the 10 genera shown to be indicators of high conductivity impacted streams by Bernhardt et al. (2012) were represented in the Stillhouse Branch sample. Importantly, 90% of the individuals collected in this sample were classified as "clingers"; these are taxa adapted to fast moving water and require open spaces between rocks the persist in large numbers. Clingers are taxa that would highly susceptible to sedimentation and habitat degradation if habitat was a significant factor contributing to the failing WVSCI score because sediment fills the interstitial spaces between rocks required by clingers.

Bernhardt et al (2012) also identified 50 taxa that consistently declined in response to conductivity associated with surface mining. Of these taxa, only one taxon (Capniidae/Leuctridae, 1 individual) was collected, and this individual was not sufficiently identified to determine whether it was the same taxon as reported by Bernhardt et al. (2012; *Leuctra*, a stonefly in the family Leuctridae). Assuming it was *Leuctra*, this taxon was found to be the most tolerant of elevated conductivity, thus finding its presence would not be surprising. Interestingly, *Leuctra* is highly sensitive to habitat degradation and hydrological modifications associated with urban runoff; it was found to be the most sensitive taxon to impervious cover in six different data sets by King et al. (2011), which included the Appalachian Mountain region of Maryland.

An entire group of organisms were missing from Stillhouse Branch: mayflies (Ephemeroptera). Mayflies are known to be the most sensitive group of aquatic insects to conductivity associated with surface mining (Pond et al. 2008, 2010, Bernhardt et al. 2012, EPA 2011, Cormier and Suter 2013a, 2013b, Cormier et al. 2013a, 2013b, Suter and Cormier 2013). The fact that not a single mayfly was collected is compelling evidence that conductivity associated with the Fola mine is the principal cause of impairment. Mayflies are known to be sensitive to other stressors, but it is highly unusual for mayflies to be completely absent from a stream if other factors are contributing to the impairment. For example, EPA (2011) considered the frequency in which mayflies were absent from streams with RBP habitat scores <115 (low habitat quality) while still having low conductivity (<200 uS/cm) and found mayflies present 99% of the time. That is, even when habitat was marginal or poor but conductivity was low, mayflies were present. The same general finding was true with every other potential confounding variable considered---mayflies were usually found in every stream as long as conductivity was normal despite numerous other stressors present. Stillhouse Branch appears to support habitat conducive for mayflies anyway (RBP = 130), thus I would not

expect habitat to be an important contributor to the failing WVSCI score or the absence of mayflies..

I conducted an additional analysis to assess the frequency at which streams in the WVDEP database had failing WVSCI scores when other factors measured at the site were within the range of reference conditions for several key environmental variables. I screened the WVDEP database that was used by Bernhardt et al. (2012) to support their analysis. In this case, I expanded the data set to include the entire state rather than just southern WV. I removed duplicates such that each site was represented only once in the data base. I also removed sites based on the following criteria:

- % Urban in the catchment > 5.0 (the level of urban found by Bernhardt et al. (2012) to result in declines in macroinvertebrate genera at the community level)
- ph < 6.0 (to exclude acid mine or precipitation influences)
- chloride > 20 mg/L (to eliminate road salts or other sources of conductivity)
- rbp < 110 (eliminated marginal/poor habitat according the the WVDEP database classification, but note that Tetra Tech (2000) considers 120 the threshold for marginal habitat).

This resulted in > 4000 sites for analysis. I categorized sites into conductivity bins and counted the number of passing (>=68) and failing (<68) WVSCI scores within each bin (Table 1):

	WVSCI			
Specific conductivity (uS/cm)	PASS	FAIL	Total (N)	% FAIL
0-100	1008	155	1163	13
101-200	752	390	1142	34
201-300	354	273	627	44
301-400	248	282	530	53
401-500	52	129	181	71
501-750	52	124	176	70
751-1000	37	131	168	78
1001-1500	23	128	151	85
>1500	2	67	69	97

At low conductivities (<100), sites passed 87% of the time. The 13% failing rate is likely attributed to other factors that I did not screen because they were not measured or weren't evident at the time of the visit to the site. If we use this as a baseline expectation, a site with reasonable habitat, pH, low catchment disturbance, and low chloride would be expected to pass 87% of the time.

With small increases in conductivity, the failure rate goes up rapidly. At >300-400, WVSCI fails 53% of the time. Streams with conductivity >1500 failed 97% of the time.

Again, at the scale of the entire state, even with potential confounding factors removed, conductivity associated with surface mining consistently and unequivocally is associated with biological impairment, and is close to 100% accurate when conductivity exceeds 1500 uS/cm. Stillhouse Branch conductivity values far exceed 1500 uS/cm and typically exceed 3000 uS/cm. Thus, placing Stillhouse Branch into the broader context of data across the entire state once again shows strong support that conductivity is the principal cause of biological impairment.

USEPA (2000) states that

> "*Where multiple stressors contribute to cause an effect, the stressor that makes the largest contribution is the principal cause. Usually a principal cause is so dominant that removing other causes has no effect on the condition of the resource. For example, if benthic habitat is both physically altered and chemically contaminated, restoring the physical habitat may have no effect until the chemical contamination is removed. In this situation the chemical contamination is the principal cause. The habitat alteration is still a cause of impairment, but it is ancillary and masked by the toxic chemical impact.*"

The weight of evidence based on both site-specific and state-wide scale information demonstrates that conductivity is the principal cause of impairment. If conductivity in Stillhouse Branch were reduced to <200 uS/cm, I would expect a dramatic increase in the the abundance of sensitive taxa, particularly mayflies, thus a macroinvertebrate community that would result in passing WVSCI score. Alternatively, if any other modifications were made to improve the condition of the stream, such as streambank restoration, etc. without a reduction in conductivity to levels consistent with natural Appalachian streams, I would expect that the site would remain biologically impaired due to elevated conductivity.

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Cases within the last four years in which I been deposed or testified as a witness:

Testified as an expert witness in aquatic ecology before the West Virginia Environmental Quality Board in the Sierra Club v. Clarke case, Appeal No. 10-34-EQB, held in Charleston, West Virginia, December 13-17th, 2010.

Sierra Club et al. v. USACOE & Highland Mining Co, Huntington WV. April-May 2012.

Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy,and Sierra Club, v. Elk Run Coal Company, Inc., and Alex Energy, Inc, US District Court, Huntington, WV. May-Dec 2013

Hourly rate for case:
$150

List of documents reviewed in preparation for this report (in addition to literature cited):

1310114 (Downstream) DS 49 Final Report

Alex Energy Trip Summary and Field Data Sheet (DS-49)

Hecker, J. Stillhouse Fact Summary.

Swan, C. Stillhouse.pdf (RBP habitat field sheets)

S200995 SMCRA Permit

UMBC appalachia mt ad 9 30 13.xlsx (spreadsheet of macroinvertebrate results from Chris Swan)

Ryan S. King, 1/16/2014

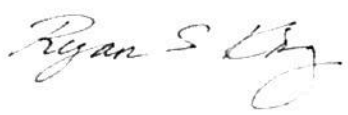

EXHIBIT A